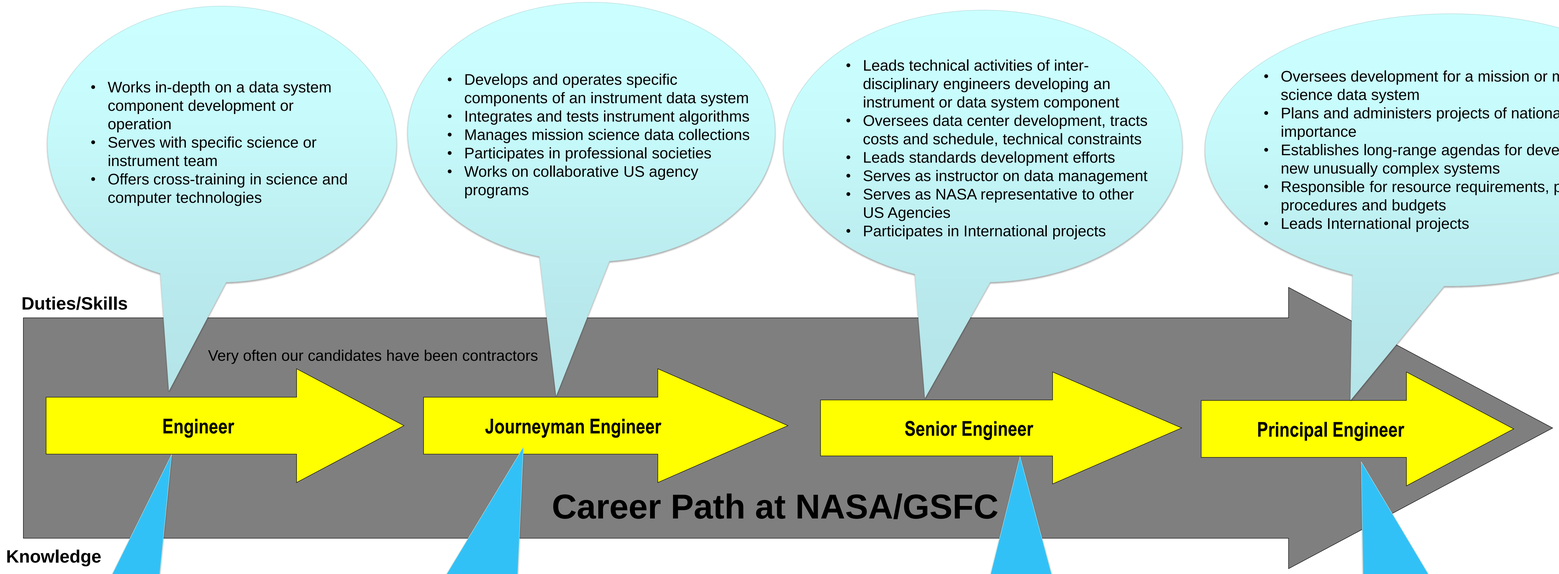
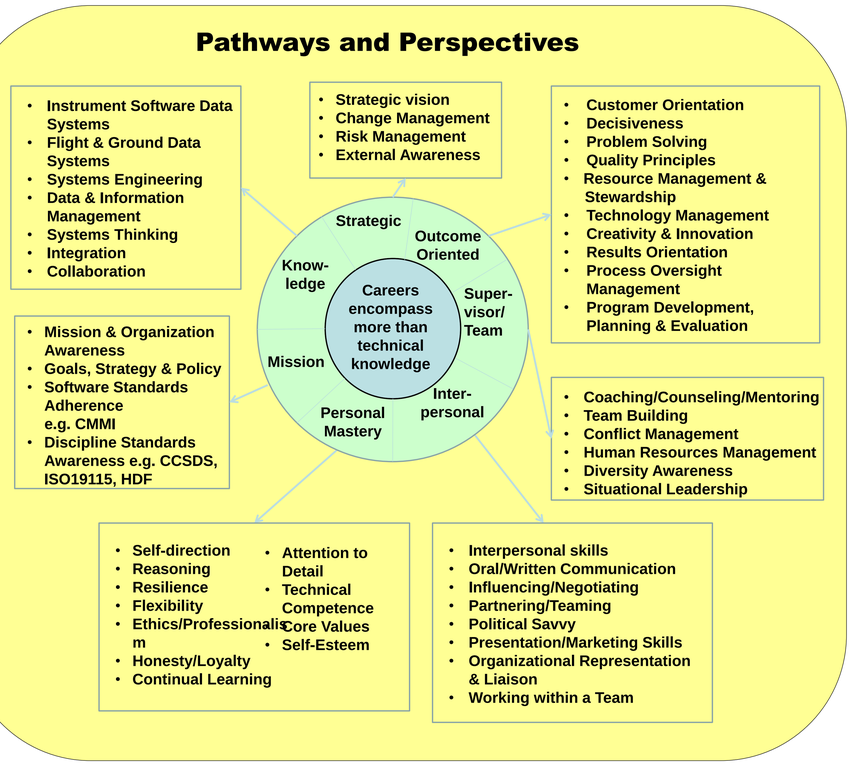
ESIP Winter Meeting
January 6-8, Washington, D.C.

Developing the Next Generation of Science Data System Engineers

John.F.Moses@nasa.gov, Jeanne.Behnke@nasa.gov, Christopher.D.Durachka@nasa.gov
NASA/Goddard Space Flight Center



Pathways and Perspectives



Science Data System Challenges

- Architect smarter, flexible and scalable data systems:
  - Simplify components with common science data processing functions to ease evolution with emerging technology while maintaining connectivity with archival science data.
  - Standardized public data access interfaces of central & distributed sources.
- Increase science findings and practical applications by enabling cross-discipline use of science data.
- Standardize the fundamentally required content and structure:
  - Common depiction of time, location and accuracy.
  - Increasing complex remotes sensors and in-situ sensors from spacecraft, aircraft and surface networks.
  - Encompass data complexities of research and application discipline communities.

Data System Engineer Challenges

- Play an increasing role in developing metadata and data products.
- Adapt data processing and integration of science algorithms to an evolving computer industry.
  - Depicting discipline specific attributes for multiple types of observational data
  - Utilize attributes that can become common across science disciplines and observation systems
- Working with increasingly complex science data, multiple datasets and diverse sources requires a skilled workforce
- Take technical training focused in data science and new technologies
- Develop next generation science data systems that can serve multiple science disciplines, diverse observational data and model output.

Career Track Guidance

Suggestions on how to find a career path:

- Develop a long-term vision with a short term plan.
- Review your career plan annually.
- Listen to what others have done. Find a mentor, be a mentor.
- Improve your skills through continuing education.
- Challenge yourself, don't be afraid to change, be willing to take a risk.

Seek out a career path that fits your goals and will be most satisfying to you:

- Your individual interests, skills, and training will dictate the path you should follow.
- Over time, modify your path based on personal interests, values, goals, experiences, and new opportunities that present themselves.